

WHAT IS CLAIMED IS:

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5 1. A method of fabricating a display panel, comprising a first step and a second step which is to be carried out immediately before said first step, said first step taking longer time to be carried out per a display panel than that of said second step,

the number of display panels to be processed in said first step being greater than the number of display panels to be processed in said second step.

10 2. The method as set forth in claim 1, wherein said first step includes the relocation step of relocating display panels into a first cassette used in said first step from a second cassette used in said second step in the greater number than the number of display panels having been processed in said second step.

15 3. The method as set forth in claim 2, wherein said relocation step includes the steps of:

(a) upwardly taking a display panel out of a first cassette in which display panels are stored, with said display panel being supported at upper and lower edges thereof;

20 (b) supporting said display panel taken out of said first cassette, at lower and side edges thereof;

(c) laterally transferring said display panel from a position above said first cassette to a position above a second cassette; and

25 (d) supporting said display panel at upper and side edges thereof and lowering said display panel into said second cassette.

4. The method as set forth in claim 3, wherein said step (a) further includes the step of compensating for a pitch at an upper edge of said display panel when said display panel is supported at said upper edge thereof.

5. The method as set forth in claim 3, wherein said step (a) further includes the step of compensating for a pitch at a side edge of said display panel when said display panel is supported at said side edge thereof.

5 such A2 6. The method as set forth in claim 3, wherein said step (a) further includes the steps of:

(a1) transferring a first cassette including display panels, into a first station;

(a2) taking said display panels out of said first cassette in said first station;

and

10 (a3) transferring said first cassette out of said first station;

and wherein said step (d) further includes the steps of:

(d1) transferring a second cassette including no display panels into a second station;

(d2) introducing display panels into said second cassette; and

15 (d3) transferring said second cassette out of said second station.

7. The method as set forth in claim 6, wherein said first cassette is transferred in a first direction in a first stream line and said second cassette is transferred in a second direction in a second stream line, said first and second
20 directions are opposite to each other, said first and second stream lines being spaced away from each other and being in parallel with each other.

25 such A3 8. The method as set forth in claim 3, further comprising the step (e) of rotating said second cassette in a horizontal plane by 90 degrees, said step (e) being to be carried out before or after said step (d).

9. The method as set forth in claim 3, further comprising the step (f) of rotating said first cassette in a horizontal plane by 90 degrees, said step (f) being to be carried out before or after said step (a).

10. The method as set forth in claim 3, wherein said first and second cassettes have the same size.

11. The method as set forth in claim 10, wherein each of said first and second
5 cassettes is comprised of:

- (a) a pair of frames;
- (b) a plurality of shafts extending between said frames; and
- (c) a pair of panel-supporting plates, at least one of said panel-supporting plates being slidable along said shafts and being able to be fixed at any position.

12. The method as set forth in claim 1, wherein said first step is a step of introducing liquid crystal into a space formed between two substrates.

13. A method of fabricating a display panel, comprising a first step and a
15 second step which is to be carried out immediately after said first step,
said first step taking longer time to be carried out per a display panel than that of said second step,

the number of display panels to be processed in said first step being greater than the number of display panels to be processed in said second step.

14. The method as set forth in claim 13, wherein said first step includes the relocation step of relocating display panels into a first cassette used in said first step from a second cassette used in said second step in the smaller number than the number of display panels having been processed in said first step.

15. The method as set forth in claim 14, wherein said relocation step includes the steps of:

- (a) upwardly taking a display panel out of a first cassette in which display panels are stored, with said display panel being supported at upper and lower

edges thereof

(b) supporting said display panel taken out of said first cassette, at lower and side edges thereof;

(c) laterally transferring said display panel from a position above said first cassette to a position above a second cassette; and

(d) supporting said display panel at upper and side edges thereof and lowering said display panel into said second cassette.

16. The method as set forth in claim 15, wherein said step (a) further includes the step of compensating for a pitch at an upper edge of said display panel when said display panel is supported at said upper edge thereof.

17. The method as set forth in claim 15, wherein said step (a) further includes the step of compensating for a pitch at a side edge of said display panel when said display panel is supported at said side edge thereof.

18. The method as set forth in claim 15, wherein said step (a) further includes the steps of:

(a1) transferring a first cassette including display panels, into a first station;

(a2) taking said display panels out of said first cassette in said first station;

and

(a3) transferring said first cassette out of said first station;

and wherein said step (d) further includes the steps of:

(d1) transferring a second cassette including no display panels into a second station;

(d2) introducing display panels into said second cassette; and

(d3) transferring said second cassette out of said second station.

19. The method as set forth in claim 18, wherein said first cassette is

transferred in a first direction in a first stream line and said second cassette is transferred in a second direction in a second stream line, said first and second directions are opposite to each other, said first and second stream lines being spaced away from each other and being in parallel with each other.

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20. The method as set forth in claim 15, further comprising the step (e) of rotating said second cassette in a horizontal plane by 90 degrees, said step (e) being to be carried out before or after said step (d).

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21. The method as set forth in claim 15, further comprising the step (f) of rotating said first cassette in a horizontal plane by 90 degrees, said step (f) being to be carried out before or after said step (a).

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22. The method as set forth in claim 15, wherein said first and second cassettes have the same size.

23. The method as set forth in claim 22, wherein each of said first and second cassettes is comprised of:

(a) a pair of frames;

20 (b) a plurality of shafts extending between said frames; and

(c) a pair of panel-supporting plates, at least one of said panel-supporting plates being slidable along said shafts and being able to be fixed at any position.

24. The method as set forth in claim 13, wherein said first step is a step of
25 introducing liquid crystal into a space formed between two substrates.

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25. A method of fabricating a display panel, comprising a first step, a second step which is to be carried out immediately before said first step, and a third step which is to be carried out immediately after said first step,

said first step taking longer time to be carried out per a display panel than those of said second and third steps,

the number of display panels to be processed in said first step being greater than both the number of display panels to be processed in said second step and the number of display panels to be processed in said third step.

26. The method as set forth in claim 25, wherein said first step includes the first relocation step of relocating display panels into a first cassette used in said first step from a second cassette used in said second step in the greater number than the number of display panels having been processed in said second step, and the second relocation step of relocating display panels from said first cassette into a third cassette used in said third step in the smaller number than the number of display panels having been processed in said first step.

27. The method as set forth in claim 26, wherein each of said first and second relocation steps includes the steps of:

(a) upwardly taking a display panel out of a first cassette in which display panels are stored, with said display panel being supported at upper and lower edges thereof;

(b) supporting said display panel taken out of said first cassette, at lower and side edges thereof;

(c) laterally transferring said display panel from a position above said first cassette to a position above a second cassette; and

(d) supporting said display panel at upper and side edges thereof and lowering said display panel into said second cassette.

28. The method as set forth in claim 25, wherein said step (a) further includes the step of compensating for a pitch at an upper edge of said display panel when said display panel is supported at said upper edge thereof.

29. The method as set forth in claim 25, wherein said step (a) further includes the step of compensating for a pitch at a side edge of said display panel when said display panel is supported at said side edge thereof.

30. The method as set forth in claim 25, wherein said step (a) further includes the steps of:

(a1) transferring a first cassette including display panels, into a first station;

(a2) taking said display panels out of said first cassette in said first station;

and

(a3) transferring said first cassette out of said first station;

and wherein said step (d) further includes the steps of:

(d1) transferring a second cassette including no display panels into a second station;

(d2) introducing display panels into said second cassette; and

(d3) transferring said second cassette out of said second station.

31. The method as set forth in claim 30, wherein said first cassette is transferred in a first direction in a first stream line and said second cassette is transferred in a second direction in a second stream line, said first and second directions are opposite to each other, said first and second stream lines being spaced away from each other and being in parallel with each other.

32. The method as set forth in claim 25, further comprising the step (e) of rotating said second cassette in a horizontal plane by 90 degrees, said step (e) being to be carried out before or after said step (d).

33. The method as set forth in claim 25, further comprising the step (f) of rotating said first cassette in a horizontal plane by 90 degrees, said step (f) being to be carried out before or after said step (a).

34. The method as set forth in claim 25, wherein said first and second cassettes have the same size.

35. The method as set forth in claim 34, wherein each of said first and second cassettes is comprised of:

- (a) a pair of frames;
- (b) a plurality of shafts extending between said frames; and
- (c) a pair of panel-supporting plates, at least one of said panel-supporting plates being slidable along said shafts and being able to be fixed at any position.

36. The method as set forth in claim 25, wherein said first step is a step of introducing liquid crystal into a space formed between two substrates.

37. A method of fabricating a display panel, comprising a first step and a second step which is to be carried out immediately before said first step, said first step taking longer time to be carried out per a display panel than that of said second step,

the number of display panels to be processed in said first step being greater than the number of display panels having been processed in said second step.

38. The method as set forth in claim 37, wherein said first step includes the relocation step of relocating display panels into a first cassette used in said first step from a second cassette used in said second step in the greater number than the number of display panels having been processed in said second step.

39. The method as set forth in claim 38, wherein said relocation step includes the steps of:

- (a) upwardly taking a display panel out of a first cassette in which display panels are stored, with said display panel being supported at upper and lower

edges thereof;

(b) supporting said display panel taken out of said first cassette, at lower and side edges thereof;

(c) laterally transferring said display panel from a position above said first cassette to a position above a second cassette; and

(d) supporting said display panel at upper and side edges thereof and lowering said display panel into said second cassette.

40. The method as set forth in claim 39, wherein said step (a) further includes the step of compensating for a pitch at an upper edge of said display panel when said display panel is supported at said upper edge thereof.

41. The method as set forth in claim 39, wherein said step (a) further includes the step of compensating for a pitch at a side edge of said display panel when said display panel is supported at said side edge thereof.

42. The method as set forth in claim 39, wherein said step (a) further includes the steps of:

(a1) transferring a first cassette including display panels, into a first station;

(a2) taking said display panels out of said first cassette in said first station;

and

(a3) transferring said first cassette out of said first station;

and wherein said step (d) further includes the steps of:

(d1) transferring a second cassette including no display panels into a second station;

(d2) introducing display panels into said second cassette; and

(d3) transferring said second cassette out of said second station.

43. The method as set forth in claim 42, wherein said first cassette is

transferred in a first direction in a first stream line and said second cassette is transferred in a second direction in a second stream line, said first and second directions are opposite to each other, said first and second stream lines being spaced away from each other and being in parallel with each other.

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a" 44. The method as set forth in claim 39, further comprising the step (e) of rotating said second cassette in a horizontal plane by 90 degrees, said step (e) being to be carried out before or after said step (d).

10 45. The method as set forth in claim 39, further comprising the step (f) of rotating said first cassette in a horizontal plane by 90 degrees, said step (f) being to be carried out before or after said step (a).

15 46. The method as set forth in claim 39, wherein said first and second cassettes have the same size.

47. The method as set forth in claim 46, wherein each of said first and second cassettes is comprised of:

(a) a pair of frames;

20 (b) a plurality of shafts extending between said frames; and

(c) a pair of panel-supporting plates, at least one of said panel-supporting plates being slidable along said shafts and being able to be fixed at any position.

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a2 48. The method as set forth in claim 37, wherein said first step is a step of introducing liquid crystal into a space formed between two substrates.

49. A method of fabricating a display panel, comprising a first step and a second step which is to be carried out immediately after said first step, said first step taking longer time to be carried out per a display panel than

that of said second step,

the number of display panels to be processed in said first step being greater than the number of display panels to be introduced into said second step.

5 50. The method as set forth in claim 49, wherein said first step includes the relocation step of relocating display panels into a first cassette used in said first step from a second cassette used in said second step in the smaller number than the number of display panels having been processed in said first step.

10 51. The method as set forth in claim 50, wherein said relocation step includes the steps of:

(a) upwardly taking a display panel out of a first cassette in which display panels are stored, with said display panel being supported at upper and lower edges thereof;

15 (b) supporting said display panel taken out of said first cassette, at lower and side edges thereof;

(c) laterally transferring said display panel from a position above said first cassette to a position above a second cassette; and

20 (d) supporting said display panel at upper and side edges thereof and lowering said display panel into said second cassette.

52. The method as set forth in claim 51, wherein said step (a) further includes the step of compensating for a pitch at an upper edge of said display panel when said display panel is supported at said upper edge thereof.

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53. The method as set forth in claim 51, wherein said step (a) further includes the step of compensating for a pitch at a side edge of said display panel when said display panel is supported at said side edge thereof.

54. The method as set forth in claim 51, wherein said step (a) further includes the steps of:

- (a1) transferring a first cassette including display panels, into a first station;
- (a2) taking said display panels out of said first cassette in said first station;

5 and

- (a3) transferring said first cassette out of said first station;

and wherein said step (d) further includes the steps of:

(d1) transferring a second cassette including no display panels into a second station;

10 (d2) introducing display panels into said second cassette; and

(d3) transferring said second cassette out of said second station.

55. The method as set forth in claim 54, wherein said first cassette is transferred in a first direction in a first stream line and said second cassette is transferred in a second direction in a second stream line, said first and second directions are opposite to each other, said first and second stream lines being spaced away from each other and being in parallel with each other.

56. The method as set forth in claim 51, further comprising the step (e) of rotating said second cassette in a horizontal plane by 90 degrees, said step (e) being to be carried out before or after said step (d).

57. The method as set forth in claim 51, further comprising the step (f) of rotating said first cassette in a horizontal plane by 90 degrees, said step (f) being to be carried out before or after said step (a).

58. The method as set forth in claim 51, wherein said first and second cassettes have the same size.

59. The method as set forth in claim 58, wherein each of said first and second cassettes is comprised of:

(a) a pair of frames;

(b) a plurality of shafts extending between said frames; and

5 (c) a pair of panel-supporting plates, at least one of said panel-supporting plates being slidable along said shafts and being able to be fixed at any position.

60. The method as set forth in claim 49, wherein said first step is a step of introducing liquid crystal into a space formed between two substrates.

10 61. A method of fabricating a display panel, comprising a first step, a second step which is to be carried out immediately before said first step, and a third step which is to be carried out immediately after said first step,

15 said first step taking longer time to be carried out per a display panel than those of said second and third steps,

the number of display panels to be processed in said first step being greater than both the number of display panels having been processed in said second step and the number of display panels to be introduced into said third step.

20 62. The method as set forth in claim 61, wherein said first step includes the first relocation step of relocating display panels into a first cassette used in said first step from a second cassette used in said second step in the greater number than the number of display panels having been processed in said second step, and the second relocation step of relocating display panels from said first cassette into
25 a third cassette used in said third step in the smaller number than the number of display panels having been processed in said first step.

63. The method as set forth in claim 62, wherein each of said first and second relocation steps includes the steps of:

(a) upwardly taking a display panel out of a first cassette in which display panels are stored, with said display panel being supported at upper and lower edges thereof;

(b) supporting said display panel taken out of said first cassette, at lower and side edges thereof;

(c) laterally transferring said display panel from a position above said first cassette to a position above a second cassette; and

(d) supporting said display panel at upper and side edges thereof and lowering said display panel into said second cassette.

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64. The method as set forth in claim 63, wherein said step (a) further includes the step of compensating for a pitch at an upper edge of said display panel when said display panel is supported at said upper edge thereof.

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65. The method as set forth in claim 63, wherein said step (a) further includes the step of compensating for a pitch at a side edge of said display panel when said display panel is supported at said side edge thereof.

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66. The method as set forth in claim 63, wherein said step (a) further includes the steps of:

(a1) transferring a first cassette including display panels, into a first station;

(a2) taking said display panels out of said first cassette in said first station;

and

(a3) transferring said first cassette out of said first station;

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and wherein said step (d) further includes the steps of:

(d1) transferring a second cassette including no display panels into a second station;

(d2) introducing display panels into said second cassette; and

(d3) transferring said second cassette out of said second station.

67. The method as set forth in claim 66, wherein said first cassette is transferred in a first direction in a first stream line and said second cassette is transferred in a second direction in a second stream line, said first and second directions are opposite to each other, said first and second stream lines being spaced away from each other and being in parallel with each other.

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10 68. The method as set forth in claim 63, further comprising the step (e) of rotating said second cassette in a horizontal plane by 90 degrees, said step (e) being to be carried out before or after said step (d).

69. The method as set forth in claim 63, further comprising the step (f) of rotating said first cassette in a horizontal plane by 90 degrees, said step (f) being to be carried out before or after said step (a).

15 70. The method as set forth in claim 63, wherein said first and second cassettes have the same size.

71. The method as set forth in claim 70, wherein each of said first and second cassettes is comprised of:

- 20 (a) a pair of frames;
(b) a plurality of shafts extending between said frames; and
(c) a pair of panel-supporting plates, at least one of said panel-supporting plates being slidable along said shafts and being able to be fixed at any position.

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25 72. The method as set forth in claim 61, wherein said first step is a step of introducing liquid crystal into a space formed between two substrates.

73. A method of relocating display panels, comprising the steps of:

- (a) upwardly taking a display panel out of a first cassette in which display

panels are stored, with said display panel being supported at upper and lower edges thereof;

(b) supporting said display panel taken out of said first cassette, at lower and side edges thereof;

5 (c) laterally transferring said display panel from a position above said first cassette to a position above a second cassette; and

(d) supporting said display panel at upper and side edges thereof and lowering said display panel into said second cassette.

10 74. The method as set forth in claim 73, wherein said step (a) further includes the step of compensating for a pitch at an upper edge of said display panel when said display panel is supported at said upper edge thereof.

15 75. The method as set forth in claim 73, wherein said step (a) further includes the step of compensating for a pitch at a side edge of said display panel when said display panel is supported at said side edge thereof.

20 76. The method as set forth in claim 73, wherein said step (a) further includes the steps of:

(a1) transferring a first cassette including display panels, into a first station;

(a2) taking said display panels out of said first cassette in said first station;

and

(a3) transferring said first cassette out of said first station;

and wherein said step (d) further includes the steps of:

25 (d1) transferring a second cassette including no display panels into a second station;

(d2) introducing display panels into said second cassette; and

(d3) transferring said second cassette out of said second station.

77. The method as set forth in claim 76, wherein said first cassette is transferred in a first direction in a first stream line and said second cassette is transferred in a second direction in a second stream line, said first and second directions are opposite to each other, said first and second stream lines being spaced away from each other and being in parallel with each other.

78. The method as set forth in claim 73, further comprising the step (e) of rotating said second cassette in a horizontal plane by 90 degrees, said step (e) being to be carried out before or after said step (d).

79. The method as set forth in claim 73, further comprising the step (f) of rotating said first cassette in a horizontal plane by 90 degrees, said step (f) being to be carried out before or after said step (a).

80. The method as set forth in claim 73, wherein said first and second cassettes have the same size.

81. The method as set forth in claim 80, wherein each of said first and second cassettes is comprised of:

- (a) a pair of frames;
- (b) a plurality of shafts extending between said frames; and
- (c) a pair of panel-supporting plates, at least one of said panel-supporting plates being slidable along said shafts and being able to be fixed at any position.

82. The method as set forth in claim 73, wherein said display panel is a liquid crystal display panel.